

CLAIMS

Claim 1 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

providing the roof module wherein the roof modules includes:

- a) a roof portion having at least one edge;
- b) a transparent panel having a bottom edge adapted for attachment to a body of the automotive vehicle during assembly of the automotive vehicle, and a top edge that is adhesively secured to the roof portion adjacent the at least one edge of the roof portion wherein the transparent panel is selected from the group consisting of a windshield, a backlite, side glass and combinations thereof; and

assembling the roof module to a body portion of the automotive vehicle; wherein the roof portion includes a roof panel and a foam-in-place headliner; wherein the transparent panel includes an encapsulation covering at least a portion of one of the edges of the transparent panel; and

wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the bottom end of the transparent panel to the body using an adhesive, the adhesive having an elongation that is greater than about 300 percent.

Claim 2 (canceled)

Claim 3 (original): A method as in claim 1 wherein the roof portion includes a roof rail assembly.

Claim 4 (original): A method as in claim 1 wherein the roof portion includes at least one peripheral component selected from the group consisting of a wire harness, a global positioning system, a temperature sensor, a speaker, a monitor, a sunroof package, a moonroof package and a light.

Claim 5 (original): A method as in claim 1 further comprising a second transparent panel selected from the group consisting of a windshield and a backlite having a top edge and a bottom edge wherein the top edge is secured to the roof portion adjacent a second edge of the roof portion.

Claim 6 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

providing the roof module wherein the roof modules includes:

- a) a roof portion having at least one edge;
- b) a transparent panel having a bottom edge adapted for attachment to a body of the automotive vehicle during assembly of the automotive vehicle, and a top edge that is adhesively secured to the roof portion adjacent the at least one edge of the roof portion wherein the transparent panel is selected from the group consisting of a windshield, a backlite, side glass and combinations thereof; and

assembling the roof module to a body portion of the automotive vehicle; wherein the transparent panel includes an encapsulation covering at least a portion of one of the edges of the transparent panel; and

wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the bottom end of the transparent panel to the body using an adhesive, the adhesive having an elongation that is greater than about 300 percent.

Claim 7 (previously presented): A method as in claim 1 wherein the roof portion includes at least one vehicle impact countermeasure selected from the group consisting of an air bag and a structural reinforcement.

Claim 8 (original): A method as in claim 1 wherein the top edge of the transparent panel is adhesively secured to the roof portion with a urethane adhesive.

Claim 9 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

providing the roof module wherein the roof module includes:

- a) a roof portion having a forward edge, a rearward edge, a pair of side edges and a pair of A-pillars extending from adjacent opposing corners of the roof portion; and
- b) a windshield having a top edge, a bottom edge and a pair of side edges wherein: (i) the top edge of the windshield is adhesively secured to the roof portion adjacent the forward edge of the roof portion and the side edges of the windshield are secured to the A-pillars; (ii) the bottom edge of the transparent panel is configured for attachment to a body portion of the automotive vehicle upon assembly of the roof module to the automotive vehicle; and (iii) the A-pillars and the body portion of the vehicle include corresponding mating structures for assisting in assembling the roof module to the body portion of the vehicle; and

assembling the roof module to the body portion of the vehicle by matingly fitting the mating structures of the A-pillars with the mating structures of the body portion and by adhesively securing the windshield to the body portion of the vehicle with a urethane adhesive;

wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the roof portion of the vehicle to a pair of B-pillars and to a pair of C-pillars of the automotive vehicle body.

Claim 10 (previously presented): A method as in claim 9 wherein a primer is utilized to assist the urethane adhesive in securing the windshield to the body portion.

Claim 11 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

providing the roof module wherein the roof module includes:

- c) a roof portion having a forward edge, a rearward edge, a pair of side edges and a pair of A-pillars extending from adjacent opposing corners of the roof portion; and
- d) a windshield having a top edge, a bottom edge and a pair of side edges wherein; (i) the top edge of the windshield is adhesively secured to the roof portion adjacent the forward edge of the roof portion and the side edges of the windshield are secured to the A-pillars; (ii) the bottom edge of the transparent panel is configured for attachment to a body portion of the automotive vehicle upon assembly of the roof module to the automotive vehicle; and (iii) the A-pillars and the body portion of the vehicle include corresponding mating structures for assisting in assembling the roof module to the body portion of the vehicle; and

assembling the roof module to the body portion of the vehicle by matingly fitting the mating structures of the A-pillars with the mating structures of the body portion and by adhesively securing the windshield to the body portion of the vehicle with a urethane adhesive;

wherein the roof portion includes a roof rail assembly having structural foam disposed therein;

wherein the step of assembling the roof module to the body of the automotive vehicle includes adhering the bottom end of the transparent panel to the body using an adhesive; and

wherein the transparent panel is windshield secured between a pair of A-pillars; and

wherein the windshield is the only transparent panel of the roof module.

Claim 12 (previously presented): A method as in claim 9 wherein the roof portion includes at least a portion of a global positioning system.

Claim 13 (original): A method as in claim 9 further comprising a second transparent panel selected from the group consisting of a windshield, a backlite having a top

edge and a bottom edge wherein the top edge is secured to the roof portion adjacent a second edge of the roof portion.

Claim 14 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

providing the roof module wherein the roof module includes:

- a) a roof portion having a forward edge, a rearward edge, a pair of side edges and a pair of A-pillars extending from adjacent opposing corners of the roof portion; and
- b) a windshield having a top edge, a bottom edge and a pair of side edges wherein; (i) the top edge of the windshield is adhesively secured to the roof portion adjacent the forward edge of the roof portion and the side edges of the windshield are secured to the A-pillars; (ii) the bottom edge of the transparent panel is configured for attachment to a body portion of the automotive vehicle upon assembly of the roof module to the automotive vehicle; and (iii) the A-pillars and the body portion of the vehicle include corresponding mating structures for assisting in assembling the roof module to the body portion of the vehicle; and

assembling the roof module to the body portion of the vehicle by matingly fitting the mating structures of the A-pillars with the mating structures of the body portion and by adhesively securing the windshield to the body portion of the vehicle with a urethane adhesive;

wherein the windshield includes an encapsulation covering at least a portion of one of the edges of the transparent panel; and

wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the roof portion of the vehicle to a pair of B-pillars and to a pair of C-pillars of the automotive vehicle body.

Claim 15 (previously presented): A method as in claim 9 wherein the roof portion includes at least one vehicle impact countermeasure selected from the group consisting of an air bag and a structural reinforcement.

Claim 16 (previously presented): A method as in claim 9 wherein the top edge of the windshield is adhesively secured to the roof portion with a urethane adhesive.

Claim 17 (previously presented): A method of assembling a roof module to an automotive vehicle, comprising:

- a) providing a roof portion having a peripheral edge, two forward corner portions and two rearward corner portions and at least two intermediate side portions;
- b) providing a transparent panel having a top edge and a bottom edge, and being selected from the group consisting of a windshield, a backlite, side glass, and combinations thereof;
- c) adhesively securing the transparent panel to the roof portion adjacent the peripheral edge of the roof portion with a urethane adhesive for forming a roof module; and
- d) assembling the roof module to a body of an automotive vehicle
wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the bottom end of the transparent panel to the body using an adhesive, the adhesive having an elongation that is greater than about 300 percent and wherein the step of assembling the roof module to the body of the automotive vehicle includes connecting the roof portion of the vehicle to a pair of B-pillars and to a pair of C-pillars of the automotive vehicle body and wherein the bottom end of the transparent panel includes an encapsulation.

Claim 18 (original): A method as in claim 17 further comprising securing a pair of opposing and spaced apart A-pillars to said roof portion extending from adjacent opposing corners of the roof portion wherein the transparent panel is a windshield with side edges secured to the A-pillars;

Claim 19 (canceled)

Claim 20 (original): A method as in claim 17 wherein the roof module includes a second transparent panel selected from the group consisting of a windshield, a backlite having a top edge and a bottom edge wherein the top edge is secured to the roof portion adjacent a second edge of the roof portion.

Claim 21 (original): A method as in claim 17 wherein the roof module is assembled in a first designated area of an assembly plant and the roof module is assembled to the body portion in a second designated area of the assembly plant.